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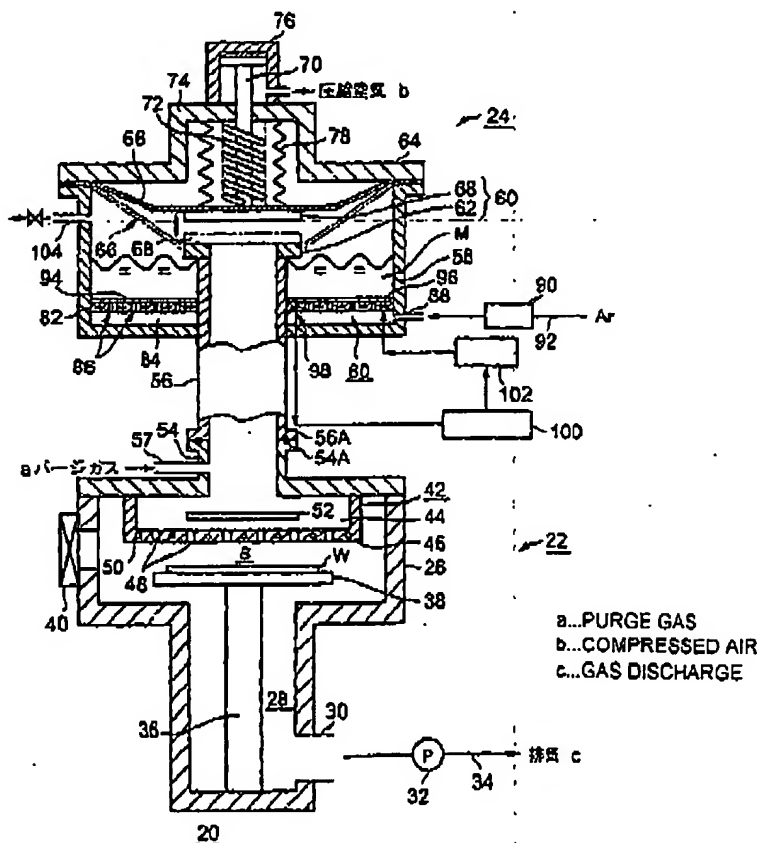
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特願2002-244299 2002年8月23日 (23.08.2002) JP
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/続案有/

(54) Title: GAS SUPPLY SYSTEM AND TREATMENT SYSTEM

(54) 発明の名称: ガス供給系及び処理システム



(57) Abstract: A treatment system capable of supplying a raw material gas produced in a material storage vessel into a treatment apparatus substantially without causing a pressure loss. A treatment system has a treatment apparatus (22) with gas-jetting means (42) for jetting a predetermined raw material gas, with low vapor pressure and formed of a metallic compound material (M), in a treatment container (26) to apply a predetermined treatment to an object (W) to be treated, and a gas supply system (24) for supplying the predetermined raw material gas to the gas jetting means. The gas jetting means is a shower head portion, and the gas supply system has a gas passage (56) extending upward from the shower head portion, a material storage vessel (58) installed on the upper end portion of the gas passage and receiving the metallic compound material in its inside, and an open/close valve (60) for opening and closing the gas passage.

/続案有/

WO 2004/019399 A1

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/JP03/10705

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ H01L21/31, C23C16/448

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ H01L21/31, C23C16/448

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Toroku Jitsuyo Shinan Koho	1994-2003
Kokai Jitsuyo Shinan Koho	1971-2003	Jitsuyo Shinan Toroku Koho	1996-2003

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6424800 B1 (Samsung Electronics Co., Ltd.), 23 July, 2002 (23.07.02), Figs. 5, 9	<u>1, 4-7, 26-27,</u> <u>33, 36</u> <u>37-44</u> 2-3, 34-35
Y	Figs. 5, 9	
A	Figs. 5, 9 & JP 2001-131754 A Figs. 5, 9 & KR 2001028415 A	
X	JP 6-196414 A (Kawasaki Steel Corp.), 15 July, 1994 (15.07.94), Figs. 1 to 3 (Family: none)	1, 7

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search
20 November, 2003 (20.11.03)Date of mailing of the international search report
09 December, 2003 (09.12.03)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP03/10705

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2-124796 A (Mitsubishi Electric Corp.), 14 May, 1990 (14.05.90), Fig. 1 (Family: none)	1-7
A	US 5019531 A (Nippon Telegraph And Telephone Corp.), 28 May, 1991 (28.05.91), Fig. 1 & JP 2-256238 A Fig. 1 & DE 3916622 A1	8-25
A	JP 2001-73145 A (Tokyo Electron Ltd.), 21 March, 2001 (21.03.01), Fig. 4 (Family: none)	8-25
P, A	JP 2003-197613 A (Hitachi Kokusai Electric Inc.), 11 July, 2003 (11.07.03), Fig. 1 (Family: none)	8-25
X	JP 2001-68465 A (Tokyo Electron Ltd.), 16 March, 2001 (16.03.01), Figs. 1, 5 & US 6482266 B1 & TW 451275 B	26, 28, 30, 36
A	JP 2000-122725 A (CKD Kabushiki Kaisha), 28 April, 2000 (28.04.00), Fig. 1 (Family: none)	29
X	JP 4-99279 A (Seiko Epson Corp.), 31 March, 1992 (31.03.92), Figs. 1 to 2 (Family: none)	26, 31, 36
A	JP 4-369833 A (Matsushita Electric Industrial Co., Ltd.), 22 December, 1992 (22.12.92), Fig. 1 (Family: none)	31
X	JP 7-18449 A (Hitachi, Ltd.), 20 January, 1995 (20.01.95), Fig. 7 (Family: none)	26, 32, 36
Y	WO 94/06529 A1 (Mitsubishi Electric Corp.), 03 March, 1994 (03.03.94), Fig. 15 & US 5520858 A	37-44

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/JP03/10705

Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

The special technical feature of Claims 1-7 is that first carrier gas supply means "comprises a gas diffusion chamber provided in the bottom of a material storage vessel, and a gas jetting plate defining the gas diffusion chamber and having a large number of gas jetting holes."

The special technical feature of Claims 8-25 is that a treatment system has "an open/close valve for opening and closing a gas passage."

The special technical feature of Claims 26-44 is that a treatment system has "detection means for detecting condition in a gas passage or in a material storage vessel, and a control portion for performing control so that a value detected by the detection means is maintained at a predetermined value."

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.
☒ No protest accompanied the payment of additional search fees.